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		Oz. Av.
30. Extensor (secundi) internodii pollicis,		0·34

Inserted into the ungual phalanx of pollex.

31. Supinator radii brevis,		0·81
32. Pronator radii teres,		1·61
33. Flexor carpi radialis,		1·03
34. Palmaris longus,		1·60
35. Flexor carpi ulnaris,		1·42
36. Flexor digitorum sublimis, 37. Flexor digitorum profundus, 38. Flexor pollicis longus,	Terminate in a common tendon, which is distributed to the ungual phalanges of the five fingers; and the upper portion of the common tendon, corresponding to that of the *flexor sublimis*, sends a separate thin slip to the index finger, which slip lies above the index branch of the common tendon.	8·40
39. Pronator quadratus,		0·43

Arises from the lower third of the ulna, and is inserted into the lower fourth of the radius.

The Rev. Samuel Haughton, M. D., Fellow of Trinity College, Dublin, read the following paper:—

Notes on Animal Mechanics.

No. XV.—On the Muscular Anatomy of the Otter (*Lutra vulgaris*).

In March, 1865, I dissected a very fine male Otter, which had lived ten years in the Zoological Gardens of Dublin, and was well known to all the frequenters of those Gardens, from his playful and docile habits. He died of miliary tubercle, accompanied by pneumonic congestion of both lungs; and his right auricle and ventricle, with the two cavæ and hepatic vein, were filled with clotted blood, the result of the pulmonary obstruction.

This beautiful animal was originally presented to the Dublin Gardens by Dr. Horne, of Ballinasloe, on the 8th of March, 1855, and died on the 27th of February, 1865.

The Council of the Zoological Society have made many attempts to rear young Otters, but their exertions have seldom been rewarded with success, owing to the extreme difficulty of procuring suitable food; for the Otter, although aquatic and piscivorous in its habits, is nursed on mother's milk, in a dry warm nest, for a longer period than most carnivorous animals. As the habits of the Otter in this country, in its wild state, are but little known, I make no apology for inserting in this place the following account of the *Lutra vulgaris*, prefatory to my description of its muscles—an account for which I am indebted to Mr. Robert Montgomery, the Secretary of the Royal Zoological Society of Ireland, who has had many opportunities of studying its habits in a state of nature. I can myself bear testimony to the fact, that when cray fish and salmon in the Barrow are scarce, the Otters that frequent its banks will attack and kill young lambs for food:—

"Otter (*Lutra vulgaris*) belongs to the Family of the Mustelidæ. There are at least five well-ascertained species. In early spring the young are produced, generally two, sometimes more; as many as five have been observed. The fur is of two kinds—one thick, short, and soft, brown with white tips; the other coarser in texture, much longer, and darker in colour.

"Pennant mentions one having been killed of 40 lbs., but 24 lbs. is a very large example in this country. It is quite true that they eat the head and shoulders of fish, leaving the remainder, when fish are plentiful; they are trained in Sweden, and still by a few people in England; they are trained very much in the same way as water dogs are. The muscular system of Otters is very largely developed. Its Irish name is *Madia eske*, meaning water dog. *Lutra vulgaris* must not be confounded with the great Sea Otter, *Enhydra marina*, which is a much larger animal, and the skin of which is so much valued by furriers. Pallas says he has known one skin to fetch upwards of £20. In Kamtschatka they are called Kalan; they are still numerous on the west coast of America, as far south as California.

"It is found in Vancouver's Island, which island is rich in Otters, producing three kinds—*Enhydra marina*, the Vison (*Putorius vison*), and our friend, called there the Land Otter, as distinguished from Enhydra. The skin of the latter, even at present, in Vancouver's Island, sometimes reaches six feet in length, and is sent to England to be dressed, and fetches from £12 to £15. The chief market is in China, where they bring 100 dollars (American).

"I have known an Otter to kill waterfowl, and I believe they sometimes kill lambs. Female goes with young nine weeks. Mr. Ogilby, so long Secretary to the London Zoological Society, is of opinion that our Irish Otter is a distinct species from the English; but I do not believe he has ever had an opportunity of verifying this opinion by examining and comparing their skeletons; he judged chiefly from differences in their habits.

"R. M."

A.—*Muscles of the Hind Limb.*

	Oz. Av.		Oz. Av.
1. Sartorius,	0·30	13. Glutæus minimus,	0·08
2. Psoadiliacus,	0·25		
3. Pectinæus,	0·07	14. Biceps femoris,	0·51
4. Adductor brevis,	0·10	15. Bicipiti accessorius,	0·05
5. Adductor magnus,	0·43	16. Semimembranosus,	0·49
6. Obturator externus,	0·07	17. Semitendinosus,	0·24
7. Adductor longus,	0·50	18. Gracilis,	0·23
8. Quadratus femoris,	0·03	19. Quadriceps extensor femoris,	1·11
9. Obturator internus et gem.	0·04		
10. Agitator caudæ,	0·06		
11. Glutæus maximus et Tensor vaginæ femoris,	0·32	20. Gastrocnemius,	0·61
		21. Plantaris,	0·25
12. Glutæus medius et Pyriformis,	0·40	22. Solæus,	0·01
		23. Poplitæus,	0·06

24. Flexor digitorum longus, ... 0·05

Inserted into the common junction of the tendons of *flexor hallucis longus* and *accessorius*. The tendons of this muscle are distributed chiefly to the hallux and index.

	Oz. Av.
25. Flexor hallucis longus,	0·22

This acts in the Otter as a common flexor, and is analogous to the *flexor profundus* of the hand.

26. Tibialis posticus,	0·06
27. Flexor digitorum brevis,	0·02
28. Flexori longo accessorius,	0·01
29. Tibialis anticus,	0·32
30. Extensor digitorum longus,	0·14
31. Extensor minimi digiti,	0·03

Its tendon passes under the groove of the outer ankle, with that of the *peronæus brevis,* and is inserted into the outer side of the ungual phalanx of the little toe.

32. Peronæus tertius,	0·02
33. Peronæus brevis,	0·06
34. Peronæus longus,	0·05

B.—*Muscles of Fore Limb.*

1. Trapezius scapularis,	0·47
2. Trapezius clavicularis,	0·64
3. Sternomastoideus,	0·72

Inserted into the first rib, the top of sternum, and raphe of lower part of neck.

4. Cleidomastoideus,	0·17
5. Omo-atlanticus, No. (1),	0·27

Arises from the anterior surface of the transverse process of the atlas, and is inserted into the anterior third of the spine of the scapula.

6. Omo-atlanticus, No. (2),	0·21

Arises from the anterior surface of the transverse process of the atlas, and is inserted into the posterior third of the spine of the scapula.

7. Serratus magnus,	1·11

In this muscle I have included the *levator anguli scapulæ,* which is quite distinct from *omo-atlanticus* No. 2, and takes its origin from the middle of the occipital line, and is inserted into the vertebral edge of the scapula, immediately above the end of its spine. The remainder of the *serratus magnus* takes its origin from the costal processes of the cervical vertebræ (2 — 7), and from the first seven ribs.*

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* There are fourteen ribs in all.

	Oz. Av.
8. Rhomboideus,	0·35

Arises from the occipital ridge, from all the cervical vertebræ, and from the first two dorsal.

9. Teres major,	0·14
10. Latissimus dorsi,	1·14

Has a double insertion.

a. Connected with the *cutaneous accessory* into the tendon of the *pectoralis minor,* near its insertion, and at its lower border, strapping down the *biceps* upon the bone. Takes origin from the posterior surfaces of the last five ribs.

b. By a tendon common to it and *teres major,* into the humerus, under *biceps,* as usual. Takes origin from the posterior surfaces of the seventh, eighth, and ninth ribs.

11. Subscapularis,	0·65
12. Pectoralis minor,	1·12

Takes origin at sternum from the ribs (4 — 9), and is inserted, strapping down the *biceps* into three-fourths of the length of the humerus.

13. Pectoralis major,	0·72

Takes origin at sternum, from the first four ribs, and is inserted into the outer side of the pectoral ridge of the humerus, and by fascia into the skin of the forearm.

14. Deltoideus clavicularis,	0·10

Inserted into the inner side of the pectoral ridge of the humerus and into the ulna, with the tendon of *brachiæus.*

15. Deltoideus scapularis,	0·12
16. Supraspinatus,	0·45
17. Infraspinatus,	0·21

18. Biceps humeri,	0·16
19. Brachiæus (externus),	0·14
20. Triceps (including fourth head from tendon of *latissimus dorsi*),	1·40
21. Anconæus,	0·05

22. Pronator radii teres,	0·08
23. Flexor carpi radialis,	0·04
24. Palmaris longus,	0·12
25. Flexor carpi ulnaris,	0·10
26. Flexor digitorum sublimis,	0·19
27. Flexor digitorum profundus,	0·15
28. Flexor pollicis longus,	
29. Pronator quadratus,	0·02
30. Supinator radii longus,	0·19

	Oz. Av.
31. Extensor carpi radialis,	0·23

Inserted by a bifurcate tendon into the near ends of the metacarpals of index and middle fingers.

32. Supinator radii brevis,	0·02
33. Extensor digitorum communis,	0·05
34. Auricularis,	0·04

Inserted into the little, ring, and middle fingers.

35. Extensor carpi ulnaris,	0·07

Inserted into the near end of the metacarpal of the little finger.

36. Extensor ossis metacarpi pollicis,	0·05
37. Indicator,	0·01

Inserted by a double tendon into the index and middle fingers.

The Rev. Samuel Haughton, M. D., Fellow of Trinity College, Dublin, read the following paper :—

Notes on Animal Mechanics.

XVI.—On the Muscular Anatomy of the Rhinoceros.

A young male Rhinoceros, three years old, having died in the Zoological Gardens of Dublin in April, 1865, the body was purchased, for £17, for the Museum of Trinity College, and I availed myself of the opportunity of making a careful examination of his muscles. I was ably assisted in the dissection by Mr. Macalister, Demonstrator in Anatomy of the Royal College of Surgeons, and by a staff of medical students, who relieved each other from time to time. The stench from the decomposing blood was almost intolerable, and several of my assistants were disabled by typhoid diarrhœa; this I escaped myself, as I had done on a former occasion when dissecting a Nylghau, which had died of putrid fever, and whose blood after death seemed to communicate diarrhœa by its smell to almost every person in contact with the body. Notwithstanding these difficulties, I was able to complete the entire muscular dissection in person, the results of which cannot fail to prove of interest to anatomists.

Having made a careful *post-mortem* examination of all the viscera, except the brain, I felt it my duty to lay the following Report before the Council of the Zoological Society :—

"School of Physic, Trinity College,
"*Dublin, April* 14, 1865.

"Report on Death of the Rhinoceros.

"The Rhinoceros died at 4 a. m. on Thursday, the 6th inst., and his body was opened in the new Dissecting Room of Trinity College on the 8th inst., at 1 p. m.